Silicon NPN Transistor

BU606D

Horizontal TV Deflectors

400V / 7A

DATASHEET

OEM –SGS Ates

Source: SGS Ates Databook 1977

Datasheet Rev. 2.0 – 09/19 – data without warranty / liability

BU 606D
BU 607D
BU 608D

EPITAXIAL PLANAR NPN

HORIZONTAL TV DEFLECTORS

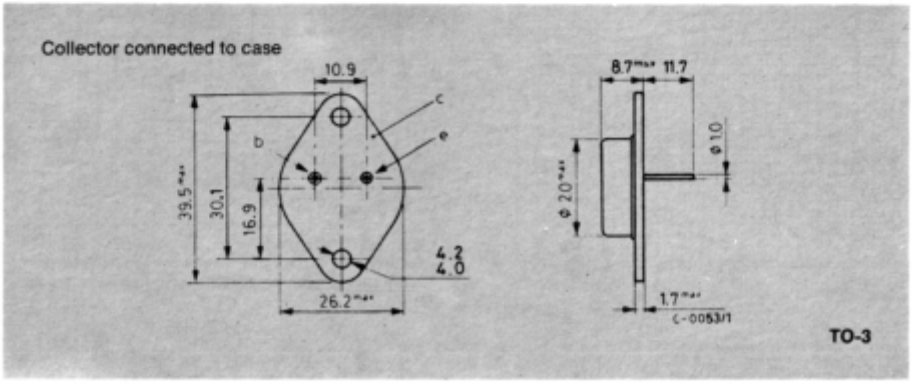
The BU 606D, BU 607D and BU 608D are silicon epitaxial planar NPN transistors with integrated damper diode, in Jedec TO-3 metal case. They are fast switching, high voltage devices for use in horizontal deflection output stages of MTV receivers with 110° CRT. The BU 606D and BU 608D are primarily intended for large screen, while the BU 607D is for medium and small screens.

ABSOLUTE MAXIMUM RATINGS

		BU606D	BU607D	BU608D
V_{CBO}	Collector-base voltage ($I_E = 0$)	400V	330V	400V
V_{CEV}	Collector-emitter voltage ($V_{BE} = -1.5V$)	400V	330V	400V
V_{EBO}	Emitter-base voltage ($I_C = 0$)	6V		
I_C	Collector current	7A		
I_{CM}	Collector peak current (repetitive)	10A		
I_{CM}	Collector peak current (t = 10 ms)	15A		
I_B	Base current	4A		
P_{tot}	Total power dissipation at $T_{case} \leq 25°C$	90W		
T_{stg}	Storage temperature	-65 to 175 °C		
T_j	Junction temperature	175 °C		

MECHANICAL DATA

Dimensions in mm



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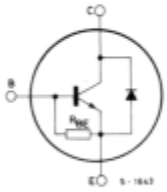
BU 607D
BU 608D

INTERNAL SCHEMATIC DIAGRAM



THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal resistance junction-case	max	1.9	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I_{CEV}	Collector cutoff current (V_{BE} = -1.5V)	for **BU606D** and **BU608D** V_{CE} = 400V			5	mA
		for **BU607D** V_{CE} = 330V			5	mA
I_{EBO}	Emitter cutoff current (I_C = 0)	V_{EB} = 6V			400	mA
$V_{CE\ (sat)}$*	Collector-emitter saturation voltage	for **BU606D** and **BU607D** I_C = 5A I_B = 0.65A			1	V
		for **BU608D** I_C = 6A I_B = 1.2A			1	V
$V_{BE\ (sat)}$*	Base-emitter saturation voltage	for **BU606D** and **BU607D** I_C = 5A I_B = 0.65A			1.3	V
		for **BU608D** I_C = 6A I_B = 1.2A			1.5	V
f_T	Transition frequency	I_C = 0.5A V_{CE} = 10V	10			MHz
t_{off}**	Turn-off time	for **BU606D** and **BU607D** I_C = 5A I_{Bend} = 0.65A			0.75	µs
		for **BU608D** I_C = 6A I_{Bend} = 1.2A			0.5	µs
V_F	Diode forward voltage	I_F = 5 A			1.5	V

* Pulsed: pulse duration = 300 µs, duty cycle = 1.5%
** See test circuit

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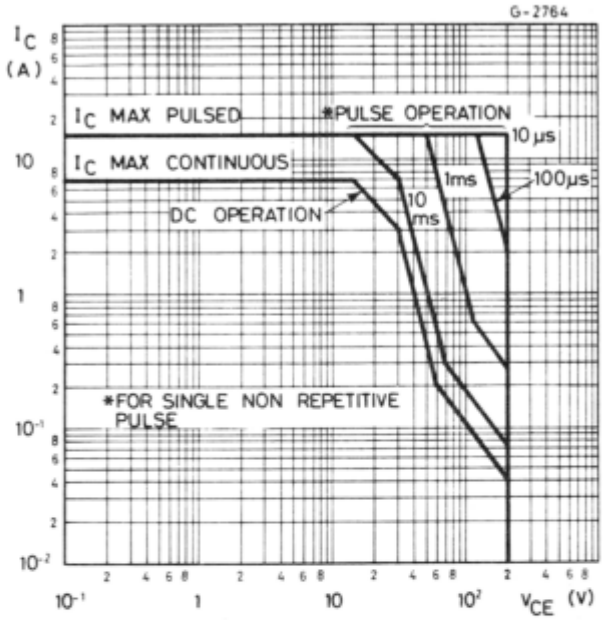
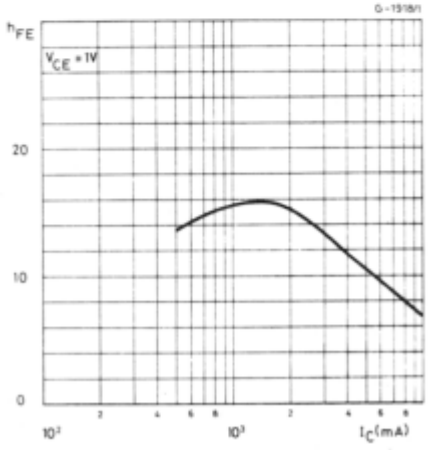
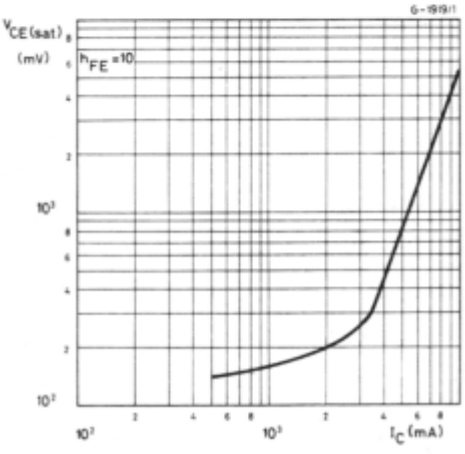
Safe operating areas



DC current gain



Collector-emitter saturation voltage



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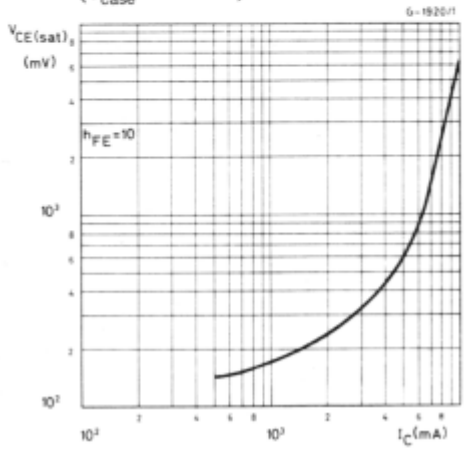
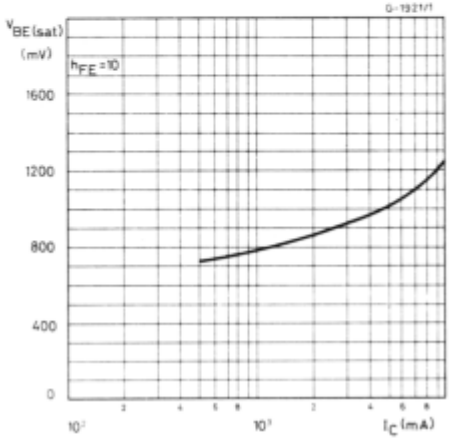
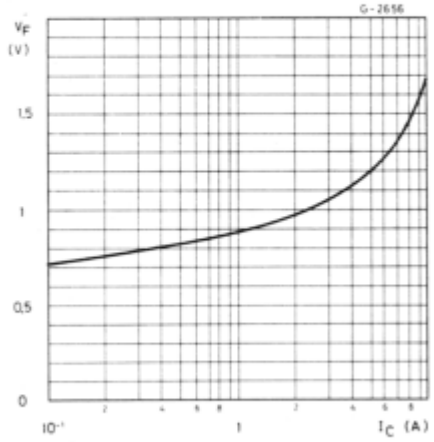
Collector-emitter saturation voltage
(T_{case} = 125°C)



Base-emitter saturation voltage



Forward voltage



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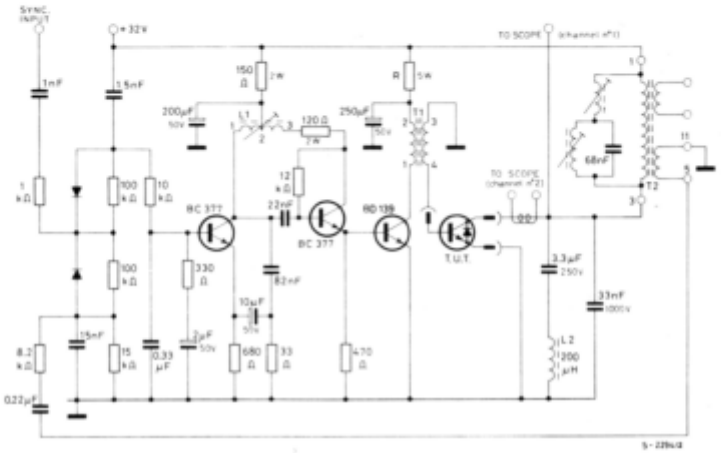
BU 608D

SWITCHING TIMES

Test circuit (fall. storage and turn-off time)



L1 Horizontal hold coil: Pins 1-2=15 turns ϕ 0.2mm; R=1.5Ω; L min=0.62 mH
Pins 2-3=293 turns ϕ 0.2mm; R=4.8Ω; L max=4.1 mH Core=siferrit B62120 25X4X2

L2 Horizontal yoke=200 µH

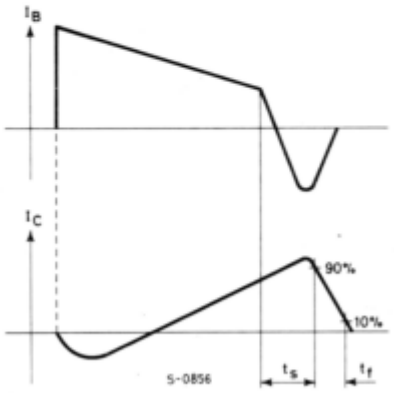
T1 Driver transformer: Pins 1-2=125 turns ϕ 0.2 mm;
Pins 3-4=25 turns ϕ 0.4 mm; Gap =0.02 mm; Core=3E3 double E 19x15x5

T2 EHT transformer manufacturer ARCO type 249.065/035

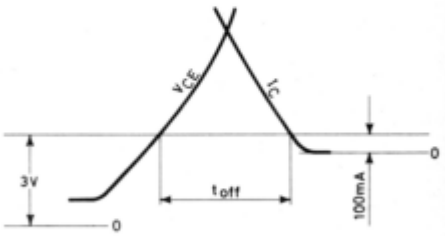
R =270 Ω for BU606D and BU607D
R =180 Ω for BU608D

Waveforms

Fall and storage time



Turn-off time



Turn-off time is the time for the collector current I_C to decrease to 100mA after the collector to emitter voltage V_{CE} has risen 3V into its flyback excursion

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